Chapter 5 Federal-Lead Remedial Action

5.1 Introduction

The primary purpose of this chapter is to provide a Remedial Project Manager (RPM) with an overview of the remedial action (RA) process and his or her responsibilities regarding the RA. The RA is the process by which the remedy, as selected in the Record of Decision (ROD) and defined by the remedial design (RD), is implemented. The chapter highlights the RPM's planning activities for the RA (generally initiated before design completion) and provides the RPM with an overview of the traditional construction process, focusing primarily on the role of the contracting party. The RPM's role in the site closeout process is also defined and explained.

5.1.1 Preparation for the Remedial Action

There are a number of steps to be taken before the actual RA commences (most of these should have occurred during the RD). **Figure 5-1** is a checklist of pre-RA issues that need resolving.

Figure 5-1

Preremedial Action Checklist

- Is the Superfund state contract (SSC) complete?
- Has the RD fact sheet been completed and community issues resolved?
- Has the Emergency Responder Preliminary Agreement for local emergency response been obtained?
- Has property access been obtained for the RA?
- Are all permit applications submitted?
- Is the designer available during the RA?
- Is the Technical Review Team (TRT) available?
- Are the RA funds available?
- Is the independent government cost estimate (IGCE) complete?
- Is the interagency agreement (IAG)/work assignment (WA) completed, including the IGCE (for the WA)?
- Has the project management plan been revised?

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5.1.2 Responsibilities of Key Participants Involved in the Remedial Action

The RA process, as illustrated in **Figure 5-2**, includes the following phases:

- RA planning activities
- Procurement of the RA constructor
- Preconstruction activities/RA submittals
- Construction of the designed remedy
- Site-completion activities

Descriptions of the roles and responsibilities of the various parties represented in an RA follow. **Figure 5-3** illustrates the parties involved in the RA process.

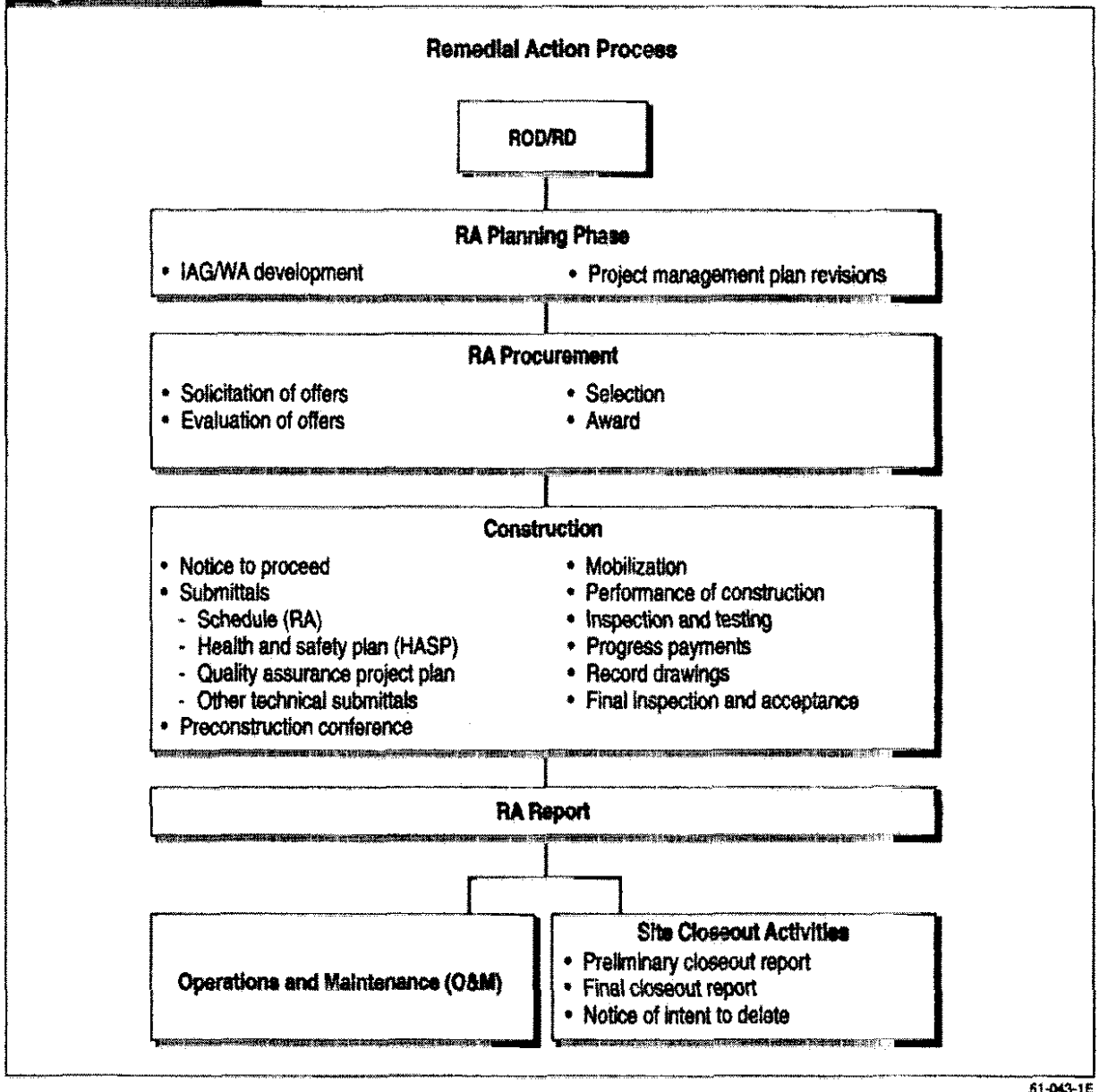
Contracting Party

The use of the term *contracting party* in this chapter differs slightly from its use in Chapter 4. The contracting party advertises, awards, and manages the RA contract. In the case of a Federal-lead RA, this role is usually filled by an EPA contractor or the United States Army Corps of Engineers (USACE). The EPA contractor is an Alternative Remedial Contracting Strategy (ARCS) or Response Action Contract (RAC) contractor. In rare situations, EPA may serve as the contracting party (i.e., when utilizing EPA prequalified contracts).

Technical Review Team

The TRT is a team of people whose primary responsibility is to assist the RPM in reviewing deliverables. The complex nature of a typical RD/RA requires in-depth knowledge of a variety of engineering and other scientific disciplines, so it is important that the RPM assemble a team of individuals with the appropriate backgrounds. The TRT is assembled as early as possible in the RD/RA process by the RPM to assist in reviewing submittals, attending project meetings, and conducting site visits (see section 3.4).

Figure 5-2



Construction Manager (CM)

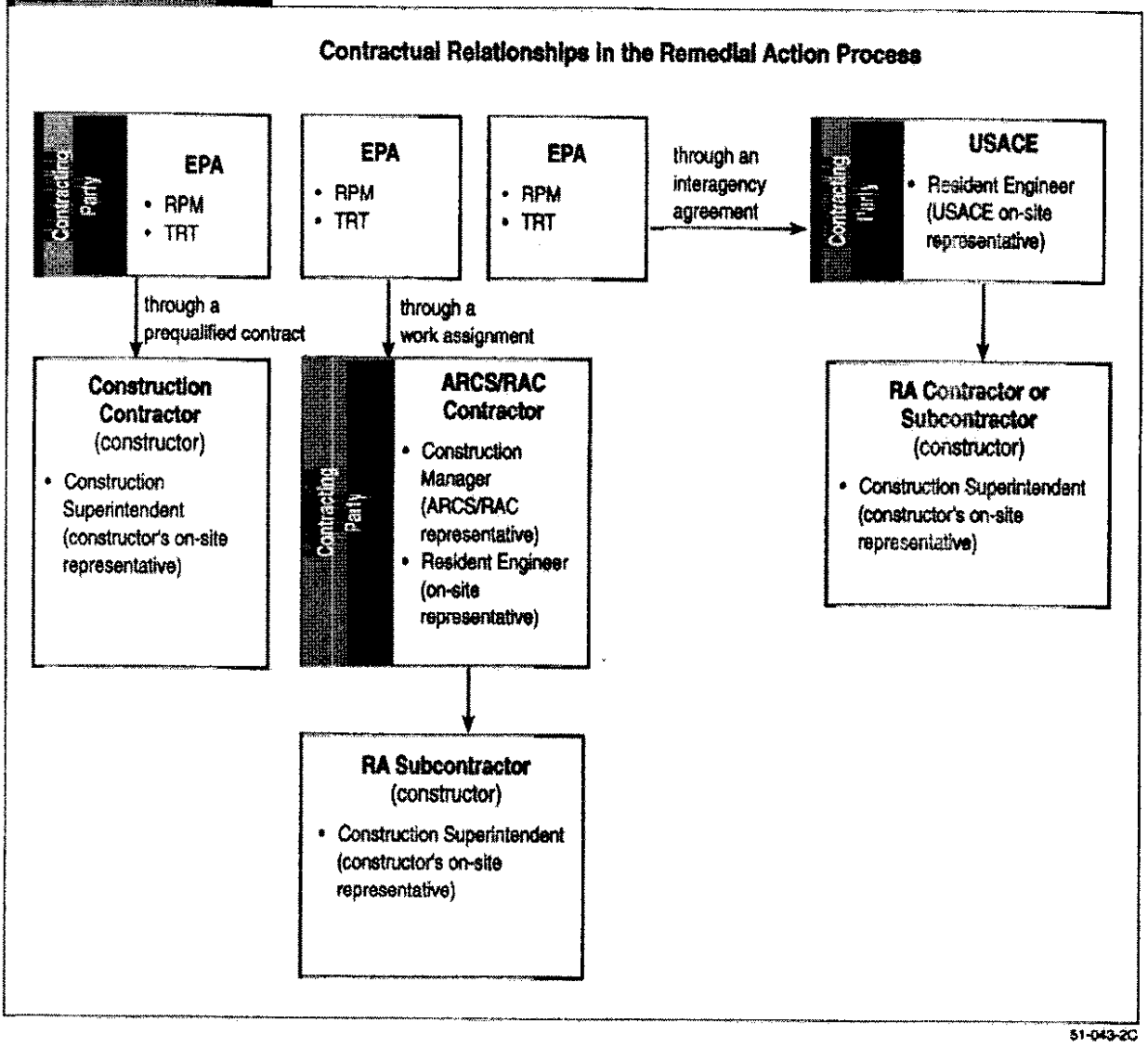
The construction manager (CM) represents the RA contracting party and is assigned to the site to administer and oversee the construction contract. For a USACE-managed RA, this terminology is not used. In such cases, the Resident Engineer (RE) fulfills those obligations.

Resident Engineer

During traditional construction projects, an RE serves as the designer's representative during the construction, installation, and start-up phases of the RA. The RE is responsible for ensuring that the constructor implements the RD in accordance with design documents. Common RE services are shown in **Figure 5-4**.

For projects where USACE managed the design and is managing the construction, USACE performs the resident engineering functions during the RA. To assist USACE in this effort, USACE retains the services of the designer (Title II services under the designer's contract with USACE). In situations where a RAC or ARCS contractor developed the RD and USACE manages the construction, the RPM retains the services of the ARCS/RAC design team to respond to questions that may arise concerning the design.

Figure 5-3



For ARCS/RAC-managed RDs and RAs, a member of the actual design team fulfills the resident engineering responsibilities. This individual may be assigned to the site full-time, depending on the complexity of the project.

Constructor

The constructor holds the contract for the RA and does the remediation work. The constructor reports directly to the contracting party. *The RPM must honor the privity of contract between the constructor and the contracting party.* The RPM cannot direct or give the appearance of directing the constructor. By interfering with the constructor, the RPM may create a situation that could lead to a dispute claim by the contracting party.

Construction Superintendent

The construction superintendent is the constructor's official representative. The superintendent manages the equipment and materials, oversees the labor, coordinates the subcontracting work, controls health and safety at the site, and communicates with the contracting party.

5.2 Remedial Action Planning Activities

The RA planning activities are similar in scope to those activities undertaken by the RPM when initiating the RD assignment and include:

- Revising the project management plan
- Assembling the TRT

Figure 5-4

Roles and Responsibilities of the Resident Engineer

- Witnesses acceptance/confirms documentation of goods, materials, and equipment
- Monitors the work performed by the constructor
- Interprets drawings and specifications
- Attends job meetings with the constructor
- Maintains project file, reviews submittal schedules, and confirms progress reports
- Conducts inspection of completed work
- Reviews value engineering proposals
- Reviews change order requests
- Maintains an independent set of drawing markups for comparison with those maintained by the constructor
- Reviews constructor quality control files and identifies issues of concern

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- Finalizing the Superfund state contract (SSC) (funds cannot be obligated without a signed SSC)
- Drafting the RA statement of work (SOW) for the ARCS/RAC contractor or (suggested for) USACE
- Developing the IGCE for ARCS/RAC-managed RAs or assisting USACE in developing IGCE for USACE-managed RAs
- Conflict of interest screen
- Developing the RA schedule for the ARCS/RAC contractor or assisting USACE in developing a schedule for USACE-managed RAs
- Issuing the WA or executing the interagency agreement (IAG)

5.2.1 Revising the Project Management Plan

As discussed in section 3.2, the RPM is encouraged to develop a project management plan to serve as the overall strategy for delivering the project on schedule and within budget. The plan should be updated to reflect decisions made during the RD.

As part of the initial RA planning activities, the RPM should review the project management plan and make necessary changes. This exercise ensures that a complete record of major decisions charting the course of the RA is adequately documented and that the RPM is prepared to undertake RA project management responsibilities.

5.2.2 Assembling the Technical Review Team

The RPM enlists the services of career professionals to provide appropriate technical assistance in reviewing submittals, serve as consultants during the RA, and participate in site visits. As the project develops, the RPM may change team members or find that team members are no longer available. For an RA where an ARCS/RAC contractor serves as the contracting party, the RPM should obtain the services of a USACE construction advisor to help the RPM review ARCS/RAC contractor claims and change orders. USACE brings its own TRT to the project when it is the contracting party. In those cases, the RPM should identify any other appropriate EPA or state representatives to add to USACE's TRT. (See section 3.4 for additional information on the formation and composition of the TRT.)

5.2.3 Finalizing the Superfund State Contract and Defining State Involvement During the Remedial Action

Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires the state to provide 10 percent of the RA cost (the state's share of the RA cost is 50 percent or more if the state operated the facility at the time of disposal of hazardous substances) and conduct all O&M activities through an SSC. Thus, the state plays a strong supporting role during the RA. The RPM must understand the state's role and adequately plan for it to prevent schedule delays.

Before obtaining RA funds for the project, EPA and the state must sign the SSC. The SSC is critical to the RA schedule, since RA procurement cannot proceed without it. The RPM must ensure that the SSC is drafted early during the RD and completed as soon as the final RA cost estimates (including the cost of construction management services) are available. The final RA cost estimate should include a cost-risk analysis that should be performed by USACE to estimate potential cost escalation during the RA project. USACE should perform this analysis because USACE is experienced in developing accurate contingency percentages for construction projects. This potential cost escalation must be factored into the state's cost-share estimates to

minimize the likelihood of SSC cost overruns during the RA (see section 3.11 for additional information on SSCs).

The SSC is important because cost sharing in the RA may bring about increased state involvement in routine site management decisions. By defining the roles and responsibilities of the state and other parties in a Federal-lead RA before the RA commences and providing detailed cost estimates with an appropriate contingency built into the estimate, an RPM may avoid situations that result in project delays.

The RPM and the state should meet regularly during the RA to discuss site progress and any issues that may affect the SSC. If the state does not participate in the RA, it may raise issues at the end of the project that cannot easily be addressed and may delay RA completion. Ideally, the RPM should encourage the state to be a member of the TRT and attend regularly scheduled site progress meetings between the RPM and USACE personnel or the ARCS/RAC contractor, participate in site visits, and attend public meetings with the RPM. This degree of state involvement is also needed to prevent the state from being "surprised" by an EPA request to amend the SSC cost-share terms and ease the transition to the O&M phase. Finally, the state and EPA, in accordance with 40 *Code of Federal Regulations* (*CFR*) Part 300.515(g), must conduct a joint inspection upon RA completion.

5.2.4 Developing the Remedial Action Statement of Work

The RA SOW is prepared during the RD and lists all RA activities and requirements. The SOW must contain clear, concise project requirements and provide key project milestones and target dates establishing the project's schedule. The technical requirements for both ARCS/RAC- and USACE-managed RAs are discussed in greater detail below.

RA SOW for ARCS/RAC WAs

The RA SOW for ARCS/RAC WAs is developed using the standard tasks for RA services identified in **Figure 5-5**. The ARCS/RAC contractor manages the actual construction activities performed by subcontractors and the RA SOW reflects this management role. In the SOW, field construction is performed by a subcontractor under a single task. It is important to differentiate between ARCS/RAC contractor submittals and subcontractor submittals. A register such as the one presented in **Appendix B** is an essential tool the RPM uses to track the ARCS/RAC contractor's work at the site and record the contractor's transmittal of submittals. The RPM (assisted by the TRT) performs these tasks when developing the RA SOW:

Figure 5-5

RAC and ARCS Contract RA Standard Tasks

	RACs
Task 1	Project planning
Task 2	Develop and update site-specific plans
Task 3	Subcontract procurement
Task 4	Management support
Task 5	Detailed resident inspection
Task 6	Cleanup validation
Task 7	Community relations
Task 8	RA implementation (subpool activity)
Task 9	Project performance
Task 10	Project completion/closeout
	ARCS Contract
Task 1	Procurement support
Task 2	Construction management
Task 3	Technical engineering services

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- Identifies ARCS/RAC contractor submittal due dates, the methods to evaluate whether the contractor has delivered the quality of work required, and EPA's procedures (i.e., time frames, number of copies needed, location of meetings, etc.) for reviewing the submittals, as they affect the contractor.
- Identifies all subcontractor submittals that EPA elects to review. ARCS/RAC contractor personnel receive numerous submittals in accordance with the RA subcontract and EPA must identify those it wishes to review.
- Outlines minimum communication requirements, including the frequency of routine meetings. Meetings must be held at least once per week to manage the RA. There are cases, however, when daily contact is necessary to ensure project success.

- Specifies when and under what circumstances the federal government will accept transfer of all constructed facilities. A definite date for government acceptance of transfer is necessary because the government pays for liability insurance through the ARCS contract and RAC invoices as long as the subcontractor is responsible for the facility. Consults the Project Officer (PO) and Contracting Officer (CO) for further instruction related to subcontractor insurance requirements for ARCS/RAC-managed RAs.
- Details expected requirements for O&M transition.

A model RA SOW, incorporating the RAC standard tasks, is included as **Appendix E.**

RA SOW for USACE IAGs

An IAG SOW is required as part of an RA IAG and serves to communicate EPA's needs to USACE. A lack of clearly defined roles and responsibilities ultimately may lead to a breakdown in communication and a reduction in project quality. Successful USACE-managed RAs are facilitated by open and regular communication between EPA and USACE.

The IAG SOW for an RA is not the same as a contractor SOW because USACE is functioning as an extension of EPA. Ideally, the RPM should coordinate with USACE to develop an IAG SOW. The RPM should also work with USACE to develop accurate construction cost estimates. The IAG SOW should define EPA's requirements, the expected schedule and known constraints, and discuss participants' roles and responsibilities. The IAG SOW should include the following:

- Roles and responsibilities
- Communication requirements between USACE and EPA
- Special reports that may be generated for the RPM
- Special community relations requirements (i.e., site tours, media events, responding to the press)
- Estimate of dollar amount of oversight costs
- Description of the relationship between the parties for ARCS/RAC designs and USACE-managed construction

5.2.5 Developing the IGCE

An IGCE is a detailed estimate of the cost to the government for services and supplies to be acquired by the contracting party. An RA IGCE is a detailed, formally approved estimate of cost to the government to support contract award. The RA IGCE for contract award purposes includes only those costs associated with the contract itself. Other government costs such as construction management, engineering during construction, construction contingencies, etc. should not be included in the IGCE used for RA procurement. The IGCE should include only contract direct costs of labor, equipment, and material; contractor markups, including overhead, profit, and bond; and escalation to the midpoint of construction. Design contingencies can also be included for special items in those projects for which the design has not been completed, such as for performance specification technologies.

IGCE for ARCS/RAC-Managed RAs

An IGCE must be completed before issuing an ARCS/RAC WA. Initially, the designer prepares a detailed cost estimate for the RA construction. This is *not* the IGCE and should not be substituted for it. The designer's construction cost estimate must be independently confirmed with the signature(s) of government personnel with relevant experience, such as the Regional IGCE coordinator or USACE staff tasked to do the IGCE through a technical assistance IAG. Both the ARCS/RAC contractor construction management costs and the actual construction costs must be estimated and included in the IGCE.

Construction contingencies, construction management costs, and other government costs are added to the IGCE after contract award to form a current working estimate for programming purposes. The contingency is essentially an emergency fund obligated by EPA for use when processing change orders and claims. The contingency is generally 10 to 25 percent of the construction cost estimate and can be used only by the ARCS/RAC contractor when authorized by the CO. Contingencies should be developed from a cost-risk analysis.

IGCE for USACE-Managed RAs

When USACE manages the RA, it undertakes an exercise similar to performing an IGCE before RA solicitation activities. USACE has a team of experienced construction cost estimators who are brought into a project before the final design is completed to do the cost estimation. The RPM should have USACE perform a cost-risk analysis to determine the actual level of cost uncertainty in the project. This provides a more realistic cost estimate which benefits the RPM when negotiating with the state.

5.2.6 Developing the Remedial Action Schedule

A proposed RA construction schedule is developed by the designer during the RD effort. For ARCS/RAC WAs, the RPM must add the ARCS/RAC contractor construction management responsibilities to the construction schedule. The RA WA schedule must include key delivery dates and EPA's required time frames for deliverable review. Once the schedule is in place, it cannot be changed (other than with a contract modification) and all parties must adhere to it. If the RPM does not abide by the schedule, it may affect the constructor's schedule. The constructor might then make a construction delay claim, which EPA may be required to pay.

The same information is pertinent to USACE-managed construction contracts. The RPM must clearly identify which submittals he or she will review and their associated review time frames. This information can then be incorporated into the schedule. USACE should develop the full RA schedule in consultation with the RPM.

5.2.7 Issuing the RA Work Assignment or Executing the Interagency Agreement

The type of WA used to initiate the RA depends on the party that manages the construction and serves as the construction contracting party. Information on issuing ARCS/RAC WAs and executing USACE IAGs is provided in section 4.4. Although the information presented in that section is specific to RD WAs and IAGs, the processes are essentially the same for RA WAs and IAGs.

5.3 Managing the Remedial Action

The RPM is responsible for managing the RA to ensure that the project is delivered on time and within the projected budget. At the same time, the RPM is responsible for communicating with the EPA contractor or USACE, the TRT, state, and community.

5.3.1 Managing the RA Work Assignment or Terms of the Interagency Agreement

The RPM is responsible for managing the scope, budget, and schedule of the RA. The level of oversight required to successfully manage the RA depends on whether USACE or an ARCS/RAC contractor serves as the contracting party. USACE serves as the agent of the federal government and oversees the RA construction contract in accordance with the *Federal Acquisition Regulation* (*FAR*). Therefore, USACE-managed RAs do not require the same amount of RPM scrutiny as ARCS/RAC-managed RAs.

EPA is held ultimately responsible for RA development and execution, regardless of which contracting party performs the RA. As EPA's representative, the RPM must keep the project on track by effectively managing the WA or IAG in a manner that protects EPA's interests. Although ultimately responsible for the RA, the RPM is removed from the actual implementation of physical work at the site because the constructor reports directly to the ARCS/RAC contractor or USACE personnel. To successfully manage the RA WA or terms of the RA IAG, the RPM does the following:

- Reviews all invoices, requesting backup documentation as necessary. Under the IAG, USACE accepts responsibility for certification of contractor invoices, thereby alleviating the RPM of this major responsibility.
- Establishes and maintains thorough and regular communications with the contracting party.
- Processes IAG/WA amendments immediately to increase funding or modify the scope of work. Any delays in processing paperwork can result in project delays leading to increased RA costs.
- Enforces the schedule; requests a notice of planned corrective actions to prevent schedule delays; and demands immediate reporting of any potential schedule delays by the constructor.

- Schedules routine site visits and attends daily job meetings between the contracting party and the constructor as part of any routine site visit. These meetings can reveal RA issues that may not be reported to the RPM. Weekly visits and progress meetings are strongly recommended. Additional visits should be included to coincide with significant construction events at the site.
- Provides timely responses to issues raised by the contracting party. During construction, quick decisions are necessary to prevent paying constructor delay claims.
- Ensures that the RPM is involved in any change orders that affect the scope, performance, or cost of the remedy and that would result in ROD modification.
- Emphasizes health and safety compliance. The RPM must take the initiative to place health and safety on the agenda during progress meetings and site visits.
- Ensures compliance with all applicable QA/QC requirements and policies.

Additional information on managing WAs and the terms of IAGs can be found in sections 4.4.1 and 4.4.2, respectively.

5.3.2 Community Relations During the Remedial Action

As discussed in section 3.12, the RPM implements a community relations plan. He or she identifies, based on personal contact with the community, how often and by what means the community is informed of the remediation activities. The RPM and Regional Community Relations Coordinator should update the community relations plan throughout the RA.

The amount of effort expended on community relations activities depends greatly on the nature of the RA and location of the site in relation to residential areas. Failure to prepare the community adequately for the upcoming RA may lead to serious difficulties during implementation. Before and during RA implementation, an RPM should:

- Inform the community about the RA procurement process and constructor selection.
- Notify the community immediately before the constructor mobilizes and before other major RA milestones that might affect the community.
- Provide routine updates about site progress through fact sheets and public meetings.
- Offer tours of the site (when safe to do so), particularly at the end of the remediation.
- Discuss remediation activities, including contingency plans, with those who live closest to the site and those along the travel route for off-site waste disposal.
- Prohibit construction workers from discussing remediation activities directly with the community and the media (this requirement can be written into the RA contract).

5.3.3 Reviewing the EPA Contractor's Remedial Action Work Plan

Reviewing and approving the EPA contractor's RA work plan is similar to the process described in section 4.6. The work plan is a detailed response to the RA SOW, containing a task-by-task description of the contractor's approach to meeting EPA's project requirements. The RPM, assisted by the TRT, reviews the work plan to ensure that the EPA contractor understands the RA requirements. The RA work plan must contain the following essential elements:

- Description of the roles and responsibilities of the construction management team, RE, and other key personnel; lines of authority; and lines of communication in the management of construction activities.
- Résumés of key contractor personnel assigned to the project.
- Description of the proposed procurement process.
- RA schedule and those procedures requiring EPA approval to update it.
- Preconstruction conference schedule, including a list of critical items to be covered.
- Method for implementing the construction quality assurance plan (CQAP) (see section 4.7.6).

- HASP for field construction activities (see section 4.7.2) which must be incorporated into the overall site HASP.
- Formal procedures for transmitting submittals and shop drawings from the constructor to the EPA contractor for review and approval. Formal procedures should be in place to identify which parties are responsible for reviewing each document. Large projects with a broad range of technical submittals should include a flow chart of the procedures as well as a narrative description.
- Description of the organization and maintenance of the RA contract files at all stages of the project, including disposition of files at the end of construction or at the end of O&M.
- Description of the required inspection and testing procedures for determining constructor compliance.
- Process by which the constructor is required to submit *record drawings* (these are design drawings, also called as-builts, showing the original design as modified by actual changes during construction). The marked-up record drawings will be kept on-site and should be available for review. A final set of record drawings is submitted after construction is completed.
- Description of the process by which the constructor submits invoices for completed work and verifies that the work is satisfactory; retention provisions; turn-around time for payment; required reports; and provision for final payment and release of retained funds.
- Description of internal procedures that the EPA contractor uses to manage change orders, identifying key personnel, lines of authority, procedures for developing estimates, and the schedule and budget adjustment negotiations.
- Description of the procedures by which the EPA contractor will resolve and process constructor claims.
- Procedures describing the process wherein the construction work is accepted and final payment is made to the constructor; the conditions that must be met by the constructor to obtain acceptance during the prefinal and final inspections; the shift in responsibility for the site between the constructor and the government; and the warranty of the work in accordance with the contract.
- For projects that produce facilities requiring postclosure operation, the EPA contractor provides the procedures for startup, operation, trouble-shooting, training, and evaluations until transfer to the state under the SSC (see 40 *CFR* 300.435) takes place.
- Identification major equipment needs for WA performance and how the contractor will obtain the equipment.
- Identification the system-testing criteria and acceptable limits, ranges, and timeframes that will be used to establish that the system is operational and functional (see section 5.7.1).

5.4 The Remedial Action Procurement Process

Procurement is a complex process in which the contracting party solicits bids (or offers) and evaluates them, selects a constructor, and awards the contract. There are four basic forms of procurement within federal construction contracting:

- Sealed bidding
- Negotiated procurement
- Two-step sealed bidding
- Non-competitive (sole-source) procurement

5.4.1 Sealed Bidding

Sealed bidding provides an opportunity for all qualified contractors to compete for the work on a price basis. The work must be described in detail so that bidders fully understand what is required and bid on an equal basis. The selected bid becomes the basis for a fixed-price contract. Therefore, sealed bidding is used for sites where detailed design specifications have been developed. Four steps are involved in sealed bidding.

- Presolicitation (i.e., the RD)—Drawings and specifications are developed in this step.

- Solicitation and receipt of bids—An invitation for bids (IFB) is advertised in the *Commerce Business Daily* (*CBD*). Bids are submitted in sealed envelopes according to IFB instructions. It is suggested that the IFB be placed in local newspapers as well.
- Bid evaluation—The bids are evaluated to determine if they are "responsive and responsible." Responsive bids are completely filled in, have all necessary attachments and signatures, and are not qualified or conditioned by the bidders in any way. Responsible bids are made by organizations that possess sufficient capital and resources and past work histories to indicate a high probability for successfully accomplishing the work. Sufficient work history is determined through consultation with the TRT.
- Award of contract—The lowest bid that is deemed responsive and responsible is announced and the contract awarded. This type of procurement typically results in lower costs to the government and a shorter bid time period since no technical evaluations are necessary.

When a majority of the sealed bids submitted in response to an IFB are significantly higher in cost than anticipated or are non-responsive, the RPM should be involved in any RA procurement decisions made. For example, depending on the reason for non-responsive bids, the IFB may need to be altered and re-issued or the procurement cancelled.

5.4.2 Negotiated Procurement

Negotiated procurement proposals are evaluated on the basis of technical merit and cost rather than cost alone. Six steps are involved in the negotiated procurement process.

- Presolicitation—Performance-based specifications are developed during the design, stating project requirements (i.e., standards of quality and services to be provided). Offerors develop their own approaches to meeting the performance standards established for the site.
- Solicitation and receipt of proposals—A request for proposals (RFP) is advertised in the *CBD*. The RFP contains project performance specifications and a description of the evaluation criteria. The scoring criteria and the basis for award also are provided. It is suggested that the RFP also be placed in local newspapers.
- Discussions—Offerors are made aware of any deficiencies in their proposals in order to bring as many as possible into the acceptable range.
- Evaluation of proposals—The cost and technical acceptability of the proposal and the offeror's firm's ability to accomplish the work are evaluated. The cost and technical evaluations are done separately and combined at the end for a total score. Proposals are usually categorized as technically acceptable, potentially acceptable, or unacceptable. If the RPM is required to make any technical judgments, input from the TRT is recommended. The government then issues interrogatories and all offerors have the opportunity to clarify or improve their proposals (e.g., make potentially acceptable proposals technically acceptable).
- Best and final offers (BAFOs)—The contracting party is required to solicit BAFOs from all technically acceptable proposals. BAFOs are evaluated and scored in terms of cost and technical merit to determine a final score.
- Source selection and award—The BAFO with the highest final score is selected and a contract awarded.

5.4.3 Two-Step Sealed Bidding

In this procurement method, offerors first submit proposals without cost information in response to an RFP and submit sealed bids if their proposals are found acceptable. The proposals are judged on their compliance with established criteria. They are categorized as being either acceptable, potentially acceptable, or unacceptable. Although this method is conducted as a sealed bidding procurement, there are two differences: (1) bidding is limited to those who have successfully completed the first stage and (2) bidders must comply with the RFP and meet any additional IFB requirements. The government then selects the lowest bid.

5.4.4 Non-Competitive (Sole-Source) Procurement

Non-competitive, or sole-source, procurement is the least-favored method of procuring an item or service and can be used only in the rarest of circumstances. *FAR* Part 6.3 states that *one* of the following circumstances must apply in order to employ this type of procurement:

- Only one responsible source is available and no other supplies or services satisfy EPA's requirements
- Unusual or compelling urgency exists (poor planning does not satisfy this criterion)
- An emergency situation exists involving industrial mobilization or engineering, development, or research capability
- International agreement (where a foreign government reimburses EPA)
- Authorized by a statute
- National security is an issue
- In the public interest not to proceed with full and open competition

Additional planning must be undertaken at the outset because of potential controversy surrounding the use of non-competitive procurement. If USACE is the contracting party, it ensures that the procurement is performed in accordance with all federal regulations. In those cases, the RPM should defer to USACE personnel judgement. When an EPA contractor is the contracting party, the CO must consent to a subcontract procured by this method.

5.4.5 The Remedial Project Manager's Role in the Procurement Process

The RPM's role is limited in the constructor procurement process, because EPA does not have a direct line of communication with the constructor (unless EPA is managing the contract directly through a prequalified contract). The RPM, however, is responsible for monitoring the process to ensure the procurement proceeds without delay. Even the best solicitation packages may need to be amended at some point during the solicitation process. This need usually arises in a bidders' conference where the potential bidders request clarification of the solicitation package.

The RPM should attend the bidders' conference which may include a "job walk" through the site. A job walk is a tour of the site to obtain a site overview and help the bidders/offerors decide how to approach the RA project. When USACE is the contracting party, the RPM is encouraged to participate in the technical review process as either a voting or nonvoting member. (Being a voting member, however, requires a substantial time commitment because the panel's voting members are sequestered several times during the selection process.) Although the RPM may participate in the technical review process for proposals in USACE-managed RAs, he or she may not participate in the evaluation of subcontractor proposals with an ARCS/RAC contractor-managed RA.

5.4.6 Approving the EPA Contractor's Selected Constructor

Before the contract is awarded, the EPA contractor sends a notice of intent to award to the RPM. The RPM then prepares an evaluation memorandum and submits it to the EPA CO for concurrence. The CO reviews the memorandum and consults with the RPM, PO, and TRT to determine if the constructor can perform satisfactorily. The CO acknowledges constructor acceptance by issuing a letter authorizing the subcontract or issuing a contract modification.

Once the EPA contractor selects the constructor, a notice of award is sent to the constructor and a copy to the RPM. This notice requires the constructor to submit all required bonds (payment, bid, and performance) and sign a contract within the period of time specified in the notice. If the selected constructor does not qualify (e.g., due to the inability to obtain bonds or meet other contractual requirements) or refuses to enter into a contract, the bid bond is forfeited. Due to the potential for award delay, the solicitation usually states that the bids and bid bonds may be held as long as 60 days after opening.

5.4.7 Construction Contract Award Controversies

An award controversy in a Federal-lead RA has the potential to create delay in the construction process. The method of managing contract award controversies, or bid protests, differs depending on the contracting party. Protests can be filed at any time in the procurement process but generally occur

immediately following the notice of award. For more specific information than is provided below, refer to the Office of Regional Counsel or the Office of General Counsel.

Construction Contracts with the ARCS/RAC Contractor

Construction contracts with an EPA contractor are subcontracts. Subcontractors to EPA contractors do not have a direct contractual relationship with EPA; therefore, subcontractors do not have access to federal administrative procedures for hearing protests. All award controversies regarding the contract between the EPA contractor and its subcontractor must be resolved between those two parties without government involvement. The parties may resort to state courts, which could lead to injunctions or other delays. In contrast, an EPA contractor that directly contracts with EPA would be able to access the federal administrative procedures described in *FAR* Part 33 to protest contract award.

Construction Contracts with USACE

FAR Part 33 details the requirements for filing and processing bid protests. An unsuccessful offeror (assuming the offeror would be a prime contractor with USACE) can file a protest with USACE or directly with the General Accounting Office (GAO). Protests submitted to USACE for resolution are governed by USACE regulations (USACE uses the Department of Defense Board of Contract Appeals). Normally, protests filed with a USACE CO before award of the contract prevent award until the protest is resolved.

Protests filed with GAO prevent award, if filed before award, or prohibit performance on the contract, if filed within ten days of award of the contract or five days after a requested debriefing to an unsuccessful offeror. The CO may award a contract in the interim if it is deemed to be in the best interest of the government or urgent and compelling circumstances that significantly affect the interests of the United States will not permit awaiting GAO's decision. Only in rare circumstances is this avenue taken. The normal course of action is to await decision by GAO.

Protests filed with GAO have greater potential for delaying projects because of GAO's review and decision-rendering timeframes. Once a protest is filed with GAO, it has 125 calendar days (mandated by the *Federal Acquisition Streamlining Act* of 1994, P.L. 103-355) to render a decision. For protests filed with GAO more than ten calendar days after contract award, the CO does not have to suspend contract performance or terminate the awarded contract unless it appears likely that the award may be invalidated.

5.5 Preconstruction Activities

During actual construction, the ARCS/RAC contractor assigns a CM to the site to supervise all construction activities, whereas USACE personnel assign an RE or a team of REs to RA projects. The following six activities occur immediately after contract award:

- Issuing the notice to proceed
- Conducting the preconstruction conference
- Delivering the preconstruction submittals
- Providing site security
- Mobilizing the constructor
- Posting EPA signs at the site

5.5.1 Issuing the Notice to Proceed

A notice to proceed initiates construction activity. The ARCS/RAC contractor or USACE issues the notice sufficiently in advance of the required date to provide the constructor adequate lead time. The RPM should request and receive a copy of the notice. The date on the notice marks the formal beginning of the construction project. Progress within the construction schedule will be measured by that date. Before the notice is issued, the constructor should have submitted a detailed construction schedule against which progress can be measured.

5.5.2 Conducting the Preconstruction Conference

There must be a preconstruction conference before work begins attended by all parties involved in the RA project, including the RPM, state, and local authorities (i.e., municipal public works department, municipal or county highway department, local emergency response personnel, etc.). This is the first meeting attended by everyone involved in the project. The purpose is to establish relationships, define roles and responsibilities, and answer any

questions concerning contract implementation. **Figure 5-6** lists activities covered in a typical preconstruction conference.

Figure 5-6

Preconstruction Conference Activities

- Introducing team members
- Discussing EPA's expectations
- Reviewing general project scope
- Reviewing the final CQAP and quality control plan
- Reviewing the project schedule
- Establishing scheduled meetings and briefings
- Reviewing roles and responsibilities
- Reviewing document control procedures
- Discussing key issues, concerns, and project goals
- Discussing procedures to resolve disputes and misunderstandings
- Reviewing the HASP and emergency response plan
- Reviewing procedures for project completion

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5.5.3 Delivering the Preconstruction Submittals

Refer to the RA SOW in **Appendix E** for a sample listing of preconstruction submittals. These submittals require approval before the constructor can be mobilized.

5.5.4 Providing Site Security

The constructor must provide a site security plan before mobilizing at the site to prevent the public from having access to potential site safety hazards and to prevent the theft of or damage to facilities. The contracting party and the RPM should review site security on a regular basis to ensure compliance with the accepted plan.

Many sites have security cameras with 24-hour surveillance. Routine checks must be conducted to ensure that the cameras are operational. *At a minimum, all sites under construction should have a guard posted during working hours.* It may be necessary to post guards 24 hours per day, depending on the specific problems encountered. The RPM must be forceful in reviewing the security measures and require all security lapses to be investigated immediately. Any corresponding corrective actions should be taken to prevent the lapse(s) from reoccurring.

5.5.5 Mobilizing the Constructor

Mobilization begins after the constructor completes preconstruction submittals. Mobilization is the transfer of operations to the project site. At this point, any delays caused by the government or the contracting party can result in constructor claims for delay. Conversely, if the constructor fails to progress in accordance with the schedule, the constructor may be subject to liquidated damages at the end of the project (but only if such provisions exist in the constructor's contract).

5.5.6 Posting EPA Signs at the Site

All Superfund sites should have signs posted at their front gates to inform the public about the current remedial activities. They should be posted when the constructor mobilizes at the site and must contain the following information:

- EPA logo (available from EPA Headquarters printing office: Room MG 100D, Environmental Protection Agency, Washington, DC 20460 (202) 260-2125)
- State logo
- USACE logo (if it is the contracting party)
- Site name (with "Superfund" in the title)
- Contract award amount
- A point of contact and telephone number for those who wish to obtain further information or report suspicious activities

Office of Solid Waste and Emergency Response (OSWER) Directive 9375.5-10/FS, "Public Awareness Signs at Superfund Sites," October 1990, provides additional information on Superfund signs.

5.6 Construction Implementation

Construction performance is the sole responsibility of the constructor. The constructor determines the methods and sequence for the work not previously specified in contract documents. Before mobilizing, the constructor must submit for approval a detailed work schedule that is used to measure the constructor's progress. The construction

superintendent supervises the construction activities and administers and coordinates the arrival of materials, equipment, and labor in a manner that proceeds without interruption. He or she supervises the individuals responsible for different categories of work and administers all subcontracts.

5.6.1 Inspection and Testing

In accordance with the quality assurance project plan (QAPP), the constructor is required to maintain an inspection system to substantiate that the work conforms with contract requirements before the work can be accepted by the contracting party. The terms of the contract describe the required tests and procedures. The constructor must provide the resources necessary for the accomplishment of these tests at the appropriate times.

In ARCS contracts and RACs, the CM, on behalf of EPA and the RD designer's RE, will observe all of the constructor's inspection activities and conduct additional inspections as necessary in accordance with the work plan to ensure the quality and quantity of the work. Under USACE contracts, the USACE RE conducts these inspections at his or her discretion (although if an ARCS/RAC contractor performs the RD there is also an RE representing the ARCS/RAC contracting firm). Inspection should be carried out in such a manner that the work is not delayed. The CM (or RE) shall maintain suitable records of the inspection activities reflecting the number of observations made, the number and types of defects found, the corrective actions taken, and the resolution of any written instructions. The following project aspects should be inspected:

- Progress
- Materials (quality and quantity)
- Quality of work
- Adherence to design
- Health and safety

The quality assurance (QA) inspectors, hired by the constructor, shall review all daily reports and construction activities to verify that the work conforms with the contract. This includes sampling data collected by the constructor. All data confirming the achievement of final cleanup levels must also be verified. Additionally, the inspector should verify compliance with all environmental requirements of the contract. These inspections shall include, but not be limited to, air quality and emissions monitoring records, waste disposal records, and compliance with the HASP. There also should be a plan for regular materials testing specifying what tests will be performed, on which materials, and testing schedules. All inspection reports and certificates must be filed on-site with the contracting party. The CM or RE reviews and initials each report prepared by the constructor. Any comments should be noted in the CM or RE's daily log.

The RPM's Role in Inspections

Construction inspection records must be available for the RPM to review on-site with assistance from the TRT during RAs in which an ARCS/RAC contractor is the contracting party. In addition, the RPM should conduct spot checks of inspection activities. The RPM should schedule site visits to ensure that the contracting party and constructor are fulfilling their respective responsibilities. The frequency of these inspections is determined by the size and complexity of the project, the rate of progress being achieved, and the nature of problems or issues arising during construction. At certain critical phases, daily inspections may be necessary. These inspections typically focus on recordkeeping, contract administration, claims and change order management, labor standards, construction progress, and construction quality.

The RPM also conducts a joint inspection with the state at the end of a Fund-financed RA to fulfill EPA's requirements under the *National Contingency Plan* (*NCP*), 40 *CFR* Section 300.515(g). The purpose of the joint inspection is to determine that the remedy has been constructed in accordance with the ROD and the RD. This joint inspection should not be confused with the prefinal or final inspections that take place between the contracting party and the constructor (see section 5.7.3).

5.6.2 Monitoring Construction Progress

The constructor should keep the project on schedule while maintaining the specified quality and cost of the work. As a practical matter, performance according to the construction schedule should be reinforced through frequent communication between the parties. If the constructor is in danger of defaulting on its contractual obligations, the contracting party must meet with the RPM to discuss

all potential options. The RPM monitors construction progress through management of IAGs for USACE-managed RAs and through WAs for ARCS/RAC-managed RAs. When working with USACE or an ARCS/RAC contractor, the RPM can monitor construction progress with the following:

- On-site construction activities
- Progress reports
- Progress payments

On-Site Construction Activities

The RPM should review the daily logs and the CM's (or RE's, in USACE projects) field diaries. Photographs, including those of deficient work, should be used to supplement the RE's or CM's daily reports and establish job progress. At some sites, the RPM or CM (or RE, in USACE projects) may watch footage taken of constructor activities by video cameras at the site. He or she can thus observe project progress without wearing protective gear. The cameras also serve to document field activities should claims arise later.

The RPM should attend weekly meetings between the contracting party and the constructor at the site whenever possible. While the RPM is on his or her site visits, he or she should take advantage of the opportunity to attend daily meetings between the contracting party and the constructor. The RPM also should conduct periodic spot checks of the site to observe and document RA progress.

Progress Reports

Detailed progress reports from the ARCS/RAC contractor and USACE are required by the contract on a monthly basis throughout the duration of the project and are usually submitted with the monthly invoices. The RPM uses the reports as a supplement to site visits to monitor construction activities. These reports must develop a chronological record of remediation activities and should contain the information outlined in **Figure 5-7**.

Progress Payments

In most fixed-price construction projects, progress payments are made based on the percentage of work completed. The payment formula is decided before work begins and a system is developed that the constructor uses to demonstrate, through field measurements and inspections, that the work has been completed. Verifying the quantity and quality of work completed is part of the contracting party's overall construction inspection duties.

Figure 5-7

EPA Contractor Progress Reports

- Documentation of the percentage of work completed and total project cost to date
- Summaries of the following items for the reporting period:
  - Work performed on site
  - Community relations activities
  - Change orders to and claims made on the contract
  - Problems or potential problems encountered, inspection failures, reworked items, etc.
  - Reports of accidents, injuries, etc.
- Status of contingency fund to date
- Estimate of work for the next reporting period
- Copies of daily reports, change orders, manifests for off-site disposal, and all laboratory/monitoring data

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Progress payments do *not* constitute final acceptance by the government of the work performed to date. It is customary to retain some portion of the initial progress payments—usually five to ten percent—until the constructor demonstrates that satisfactory progress is being made. Full progress payments are usually made when 50 percent of the work is complete and continue until project closeout.

At the end of the project, sufficient funds must be retained as a means of ensuring that *punch list* (a written list of items needing correction or completion in order to complete the contract terms) items are performed and the final inspection is completed. Final acceptance usually occurs after performance of punch list items and completion of the final inspection and sometime during or after the process of achieving operational and functional status (see section 5.7.1).

The RPM must review and certify for payment the ARCS/RAC contractor's invoice by verifying that the work has been completed as stated on the invoice and accompanying progress report. The invoice must include the constructor's costs as well. The ARCS/RAC contractor retains the funds payable to the constructor as noted above. The RPM should request backup documentation as necessary.

For a USACE-managed site, the RPM receives and reviews Standard Form 1080 for final payment. Although the RE certifies the invoice for payment, the RPM must still review the invoice and may request backup documentation as necessary. If there are errors, corrections will be reflected on future invoices.

5.6.3 Reviewing Record Drawings

As the construction progresses, the constructor and CM or RE document each segment of completed work. As part of this documentation, markups will be made on a set of drawings. On simple projects, such as a water main installation, the record drawings can be markups of the original RD drawings. The markups illustrate how the installed facilities differ from the original design. For the installation of a treatment facility, markups may be made on the drawings indicating the actual components installed. At the completion of the project, these markups will be used to produce a clean set of record drawings that accurately describe the installed facilities.

The RPM should review the development and ensure the accuracy of the markup drawings as the work progresses and that they are provided to EPA and the state for O&M. The requirements for modifying original drawings (i.e., production of record drawings) in accordance with the markups should be included in the RA SOW with the requirement for RE services from the designer.

5.6.4 Changes to the Construction Contract

Construction contracts for both ARCS/RAC contractors and USACE contain a *changes* clause and other related clauses. The *changes* clause provides the needed flexibility to change the work described in the contract to adjust to actual field conditions and new interpretations of the drawings and specifications as the work progresses. The *changes* clause also can be used to order additional work within the scope of the contract to meet the government's need to implement the remedy.

The constructor is obligated to accomplish the work ordered by the CM or RE who exercises the *changes* clause, and in return is guaranteed an equitable adjustment to both the price and the project schedule. Additionally, the constructor may process claims under the *changes* clause for equitable adjustments for construction change costs. Construction changes occur when the constructor performs work without a formal change order due to the direction of the CM, RE, or other authorized contracting party employee.

Whenever the work is changed, both parties must negotiate acceptable terms. When negotiations are successful, the work changes are accomplished under a supplemental agreement to the contract. If the parties are not able to reach agreement, the constructor will be ordered to proceed with work under a change order for a price that the CM or RE considers to be reasonable. If the constructor is unsatisfied with the price, the constructor may file a claim against the contracting party to resolve the issue.

The RPM will be closely involved with ARCS/RAC-managed RA change orders as part of his or her WA management duties. For ARCS/RAC contractor-managed RAs, there are two distinct spheres of authority regarding changes in EPA contracts. The constructor is a subcontractor under the EPA prime contractor, so the government is not a party to the actual construction contract. The EPA contractor, therefore, is the only party with authority to negotiate or order changes to the construction contract. The second sphere of authority is in the contractual relationship between the EPA contractor and EPA. The contractor must obtain EPA review and approval of the changed work within the context of the WA. The EPA CO is the only individual who can commit the government to pay these costs. Changes are paid through the contingency fund (see section 5.2.5). The CO requests that the CO's Technical Representative review and make recommendations to support the payment.

For USACE-managed RAs, USACE has its own change order and construction change procedures but the RPM and USACE personnel need to communicate regarding significant change orders, especially if a change order will result in a need for more funds than authorized under the IAG or if the change order affects the ROD.

Office of Solid Waste and Emergency Response (OSWER) Directive 9355.5-01/FS, "ARCS Construction Contract Modification Procedures," September 1989, provides additional information on processing change orders.
